

Abstract

A particle detector switchable from an ion detector to an electron detector includes an ion-to-electron converter and a scintillator detector. With one set of voltages on the components, the converter has minimal impact on the electron trajectories so the electrons are efficiently detected by the scintillator detector. With different voltage settings on the components, the detector can be operated in positive ion mode to collect positive ions with adequate efficiency for most FIB applications. The ion-to-electron converter is preferably in the shape of a cylinder or includes multiple parallel plates